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Breathing retraining in mild asthma : what are the advantages?

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Hyperventilation is a current occurrence in asthma. It may result from overbreathing when bronchoconstriction occurs, and may be caused by emotional affects. Hyperventilation is also accompanied by an increase of relatively dry and cool air, which is a common asthma trigger.

We made the hypothesis that some mild asthmatic subjects present hyperventilation, and that the treatment of hyperventilation will have an effect on physiology and emotions in asthma.

We measured the $P_{et}CO_2$, the FEV_1 , the respiratory rate and the heart rate of 120 subjects : 40 were asthmatic subjects who then received a breathing retraining; 40 were also mild asthmatic subjects but received no intervention; and the 40 others were healthy control subjects.

The mean age of the three groups was the same. The baseline FEV_1 were also the same in the 3 groups. The heart rate at rest was also the same, but the $P_{et}CO_2$ of the control group (mean (SD) 34.8 (3.1) mm Hg) was statistically higher than the $P_{et}CO_2$ of the asthmatics (mean (SD) 32.6 (3.3) mm Hg) ($p < 0.001$).

The respiratory reeducation caused no change on $P_{et}CO_2$; however, it caused a slower respiratory frequency ($p < 0.01$). The asthma symptoms (measured by a daily diary) of the asthmatic group who received a breathing retraining decreased significantly as compared to the other group of asthmatics.

The impact of the respiratory reeducation on psychological aspects (anxiety sensitivity and quality of life) will also be discussed.